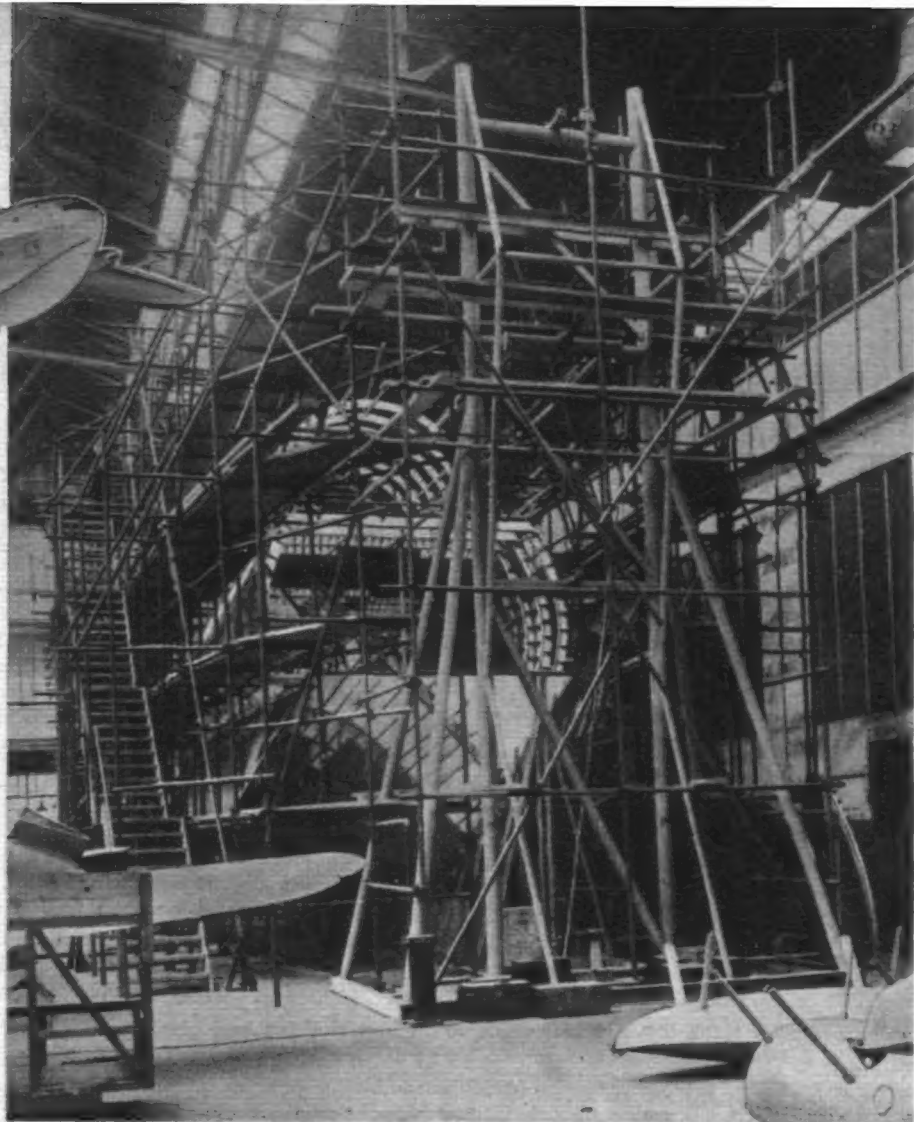
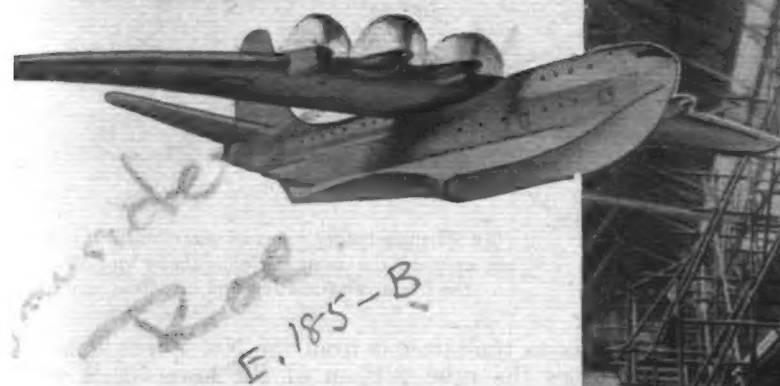


January 15th, 1948



SR/45

Preliminary Survey of the Big Saunders-Roe Flying Boat Now Being Constructed at Cowes

THE work of examining, analyzing and describing aircraft is an occupation of absorbing interest, yet by its very nature there exists an ever-present danger of being trapped into an attitude of mental glibness towards aeronautical developments. It is all too easy to become blasé about achievements which are very real and hard-won steps forward along the road of aviation progress; perhaps it is because development was so rapid during the war years.

This soliloquy is prompted by the feelings we experienced when entering the large hangar at East Cowes. The first impression registered is of a mass of steel scaffolding; then we pick out a silver-grey sheen of light alloy—the burgeoning hull structure of the big Saunders-Roe boat. (Or rather the most advanced of the three which are being built.) On walking into the middle of the hangar floor to try to get a better idea of the aircraft's size the idea grows, mistakenly, with memory of the Brabazon's slim tapering length, that this flying boat is not so big after all.

The mistake arises because the bow structure is not yet complete, and about forty feet of empennage has still to be added when the hull is advanced enough to be moved out of the jig. A foreshortened effect is thus gained which leads one astray. Proportion is restored, however (and in good measure) when one climbs up the four flights of steps to the top platform of scaffolding and can then look down into the partly built hull. This is truly impressive and restores at once the confidence that here is, after all, a very large aircraft indeed.

Some idea of the proportions of the hull may be gained from the accompanying photographs and drawings. In terms of figures, the midship dimensions are 5ft 7½in radius for the top half of the "bubble," and 7ft 3in radius for the lower deck, then the planing bottom extends down about eight feet below this. The overall height of the hull at the step station is 24ft 3in, whilst to the top of the fin the height will be 55ft 9in—just about one-third the height of Nelson's Column.

This is, perhaps, neither the time nor place to discuss the recent controversy regarding the decision whether to go ahead with the development of the SR/45 and the

Brabazon; but it is relevant to state that, in our view, it would be a great loss in almost every sense if these projects were shelved. In the field of flying-boat design this country has a particularly good record and possesses unique design experience. Not to capitalize these advantages—and particularly in the light of the recent American revival of interest in marine aircraft—would seem to have every appearance of folly.

Many of the most formidable arguments against the flying boat are diminished, and some are quite eradicated, as the physical size of the aircraft is increased. Thus, by comparison with a landplane of SR/45 size, the additional form drag occasioned by a body shaped as a hull is negligible. Again, the increase in structure weight caused by having a planing bottom is offset by the obviation of having to carry a landing gear. The designed structure weight of the SR/45 is close to 28 per cent and this is a value which would be enviable in an orthodox landplane of similar size: in this connection it is not invidious, we feel, to point out that the estimated structure weight of the Brabazon is 31.93 per cent.

Deck Arrangements

For purposes of description the SR/45 can be regarded as being divisible into three layers, viz., the planing bottom, lower deck and upper deck. The employment of what has become known as a "double-bubble" section is, of course, due to the stressing claims of pressurization, but in this particular application it is rendered the more interesting by, as it were, being grafted on to an additional structure, the planing bottom. When considering the latter it seems a great pity that so much volume should be put to no accommodation purpose. The tremendous loads imposed on the planing bottom, however, make diaphragm bulkheads an essential, but employment of the intervening volumes even for baggage stowage is not practicable as access hatches in the deck would require to be pressure-tight and a certain amount of water is almost bound to be found in the bilges.

No hard and fast scheme of intended layout has yet been decided upon, but a full-scale mock-up of the hull